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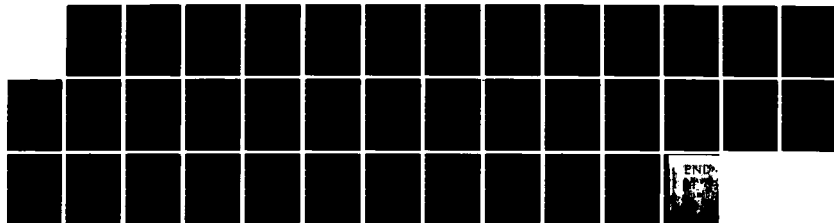
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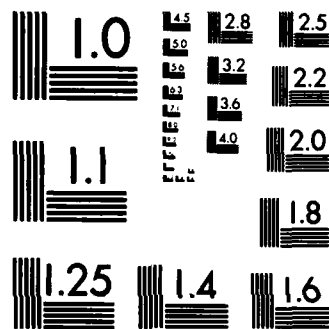
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Organizations As Information Processing Systems

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Toward a Model of Organizations
As Interpretation Systems

Richard L. Daft
Karl E. Weick

TR-ONR-DG-04

September 1983

Department of Management
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
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) A comparative model of organizations as interpretation systems is proposed. The model describes four interpretation modes: enacting, discovering, un-directed viewing, and conditioned viewing. Each mode is determined by (1) management's beliefs about the environment and (2) organizational intrusiveness. Interpretation modes are hypothesized to be associated with organizational differences in environmental scanning, equivocality reduction, strategy, and decision making. 		

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TOWARD A MODEL OF ORGANIZATIONS AS INTERPRETATION SYSTEMS

Consider the game of twenty questions. Normally in this game one person leaves the room, the remaining people select a word that the person is to guess when he returns, and the only clue given about the word is whether it signifies an animal, vegetable, or mineral. The person trying to guess the word asks up to twenty questions which can be answered yes or no in an effort to guess what the word is. Each question is designed to provide new information about the correct word. Together the questions and answers are the process by which an interpretation is built up by the person who is "it."

Organizations play twenty questions. Organizations have limited time and questions, and they strive for the answer. The answer is discovering what consumers want that other organizations do not provide. The answer is finding that there is a market for pet rocks, roller skates, encounter groups, erasable ball point pens, or zero population growth. Many organizations presume there is a correct answer to the puzzle of twenty questions. They query the environment with samples, market surveys, and test markets. They may establish specialized scanning departments that use trend analysis, media content analysis, and econometric modeling to obtain answers about the external environment. These organizations try to find an acceptable answer before their resources run out, before competitors corner the market, before people's interests change, or before more compelling opportunities in other environmental sectors dominate the search.

All of these activities, whether in organizations or in twenty

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questions, represent a form of interpretation. People are trying to interpret what they have done, define what they have learned, solve the problem of what they should do next. Building up interpretations about the environment is a basic requirement of individuals and organizations. The process of building the interpretation may be influenced by such things as the nature of the answer sought, the characteristics of the environment, the previous experience of the questioner, and the method used to acquire it.

Why interpretation?

Pondy and Mitroff (1979) recently reminded organizational scientists that organizations have characteristics typical of level 8 on Boulding's (1956) nine-level scale of system complexity. Boulding concluded that organizations are among the most complex systems imaginable. Organizations are vast, fragmentated, and multi-dimensional. Pondy and Mitroff argued that most empirical research is at Boulding's levels 1 to 3, which assumes organizations behave as static frameworks or mechanical systems.

One purpose of this paper is to propose a conceptualization of organizations that is at a higher level of system complexity, and incorporates organizational activities and variables that have not been captured in other approaches (Weick and Daft, 1983). The critical issue for interpretation systems is to differentiate into highly specialized information receptors that interact with the environment. Information about the external world must be obtained, filtered and processed into a central nervous system of sorts, where choices are

made. The organization must find ways to know the environment. Interpretation is a critical element that distinguishes human organizations from lower level systems.

A second purpose for this paper is to integrate diverse ideas and empirical facts that pertain to organizational interpretation of the environment. Pfeffer and Salancik (1978) reviewed the literature on organization and environment relationships. They concluded that scanning is a key topic for explaining organizational behavior, yet practically no research had been reported on environmental scanning processes. We also have little understanding of the interpretation process and the organizational configurations that may enhance interpretation. The scarcity of empirical studies remains, although a few findings have been reported in diverse areas, such as organization theory, policy and strategy, futures research, and planning. The consolidation of these ideas, and the organization of them into a model of interpretation system characteristics, may provide a stimulus for future research into scanning and interpretation processes.

Working Assumptions

Any approach to the study of organizations is built upon specific assumptions about the nature of organizations and how they are designed and function. Four specific assumptions underlie the model presented in this paper, and clarify the logic and rationale upon which the interpretation system approach is based.

The most basic assumption, consistent with Boulding's scale of system complexity, is that organizations are open social systems that process

information from the environment. The environment contains some level of uncertainty, so the organization must seek information and then base organizational action on that information. Organizations must develop information processing mechanisms capable of detecting trends, events, competitors, markets, and technological developments relevant to their survival.

The second assumption concerns individual versus organizational interpretations. Individual human beings send and receive information and in other ways carry out the interpretation process. Organization theorists realize that organizations do not have mechanisms separate from individuals to set goals, process information, or perceive the environment. People do these things. Yet in this paper we assume that the organizational interpretation process is something more than what occurs by individuals. Organizations have cognitive systems and memories (Hedberg, 1981). Individuals come and go, but organizations preserve knowledge, behaviors, mental maps, norms, and values over time. The distinctive feature of organization level information activity is sharing. A piece of data, a perception, a cognitive map, is shared among managers who constitute the interpretation system. Passing a startling observation among members, or discussing a puzzling development, enables managers to converge upon an approximate interpretation. Managers may not agree fully about their perceptions (Starbuck, 1976), but the thread of coherence among managers is what characterizes organizational interpretations. Reaching convergence among members characterizes the act of organizing (Weick, 1979), and enables the organization to interpret as a system.

The third assumption is that strategic-level managers formulate the organization's interpretation. When we speak of organizational

interpretation we really mean interpretation by a relatively small group at the top of the organizational hierarchy. A large number of people may span the boundary with the external environment (Aldrich and Herker, 1977; Leifer and Delbecq, 1978) and this information is channeled into the organization. Organizations can be conceptualized as a series of nested systems, and each subsystem may deal with a different external sector. Upper managers bring together and interpret information for the system as a whole. Many participants may play some part in scanning or data processing, but the point at which information converges and is interpreted for organization level action is assumed to be at the top manager level. This assumption is consistent with Aguilar's (1967) observation that below the vice presidential level, participants were not informed on issues pertaining to the organization as a whole.

The fourth assumption is that organizations differ systematically in the mode or process by which they interpret the environment. Organizations develop specific ways to know the environment. Interpretation processes are not random. Systematic variations occur based on organization and environmental characteristics, and the interpretation process may in turn influence organizational outcomes such as strategy, structure, and decision making. For example, Aguilar (1967) interviewed managers about their sources of environmental information. He concluded that scanning behavior might vary according to the breadth or narrowness of the organization's viewing, and by the extent of formal search. Other authors have suggested that institutional scanning can be classified as regular or irregular (Fahey and King, 1977; Leifer and Delbecq, 1976), or by the extent to which organizations passively perceive the environment versus creating or enacting external reality (Weick, 1979; Weick and Daft, 1983).

Definition of Interpretation

Organizations must make interpretations. Managers literally must wade into the ocean of events that surround the organization and actively try to make sense of them. Organization participants physically act on these events, attending to some of them, ignoring most of them, and talking to other people to see what they are doing (Braybrooke, 1964). Interpretation is the process of translating these events, of developing models for understanding, of bringing out meaning, and of assembling conceptual schemes among key managers.

The interpretation process in organizations is neither simple nor well understood. There are many interpretation images in the literature, including scanning, monitoring, sense making, interpretation, understanding, and learning (Duncan and Weiss, 1979; Hedberg, 1981; Weick, 1979; Pfeffer and Salancik, 1978). These concepts can be roughly organized into three stages that constitute the overall learning process, as reflected in figure 1. The first stage is *scanning*, which is defined as *the process of monitoring the environment and providing environmental data to managers*. Scanning is concerned with data collection. The organization may use formal data collection systems, or managers may acquire data about the environment through personal contacts.

The second stage in figure 1 is where interpretation occurs. Data are given meaning. Here the human mind is engaged. Perceptions are shared and cognitive maps are constructed. An information coalition of sorts is formed. The organization experiences interpretation when a new construct is introduced into the collective cognitive map of the organization. Organizational *interpretation* is formally defined as *the process of translating events and developing shared understanding and conceptual schemes among members of upper management*. Interpretation gives meaning to data, but occurs before organizational learning and action.

(Figure 1 about here)

Learning, the third stage, is distinguished from interpretation by the concept of action. Learning involves a new response or action based on the interpretation (Argyris and Schon, 1979). Organizational learning is defined as *the process by which knowledge about action-outcome relationships between the organization and environment is developed* (Duncan and Weiss, 1979). Learning is a process of putting cognitive theories into action (Hedberg, 1981; Argyris and Schon, 1978). Organizational interpretation is analogous to cognitive understanding by an individual, and organizational learning is analogous to learning a new skill by an individual. The act of learning also provides new data for interpretation. Feedback from organizational actions may provide new collective insights for coalition members. Thus the three stages are interconnected through a feedback loop in figure 1.

Figure 1 and the definitions of scanning, interpretation, and learning oversimplify complex processes. Factors such as beliefs, politics, goals, and perceptions may complicate the organizational learning cycle (Staw, 1980). The purpose of the figure 1 is to illustrate the relationship of interpretation to scanning and learning as the basis for a model of organizational interpretation.

Toward a Model of Organizational Interpretation

In this section we identify two key dimensions for explaining organizational interpretation differences, and we propose a model of organizational interpretations. The dimensions used to explain organizational interpretations are (1) management's beliefs about the objectivity of the external environment, and (2) the extent to which the organization

intrudes into the environment to understand it. The proposed model provides a way to describe and explain the diverse ways organizations may obtain knowledge about the environment.

Assumptions About the Environment

Many organizations undoubtedly play the interpretation game with the goal of finding the correct answer, just as in the game of twenty questions. The game of twenty questions, however, is of limited value as a metaphor because there is one way in which it mocks many organizational worlds. Many organizations have nothing that corresponds to "the answer." In everyday life the act of questioning may be much more influential in determining the correct answer than is the case with the clear-cut roles of asking and answering and the fixed answer present in the conventional version of twenty questions.

Twenty questions becomes more typical with a variation suggested by the physicist John Wheeler. Once the player leaves the room so that those remaining can choose the word, the game unfolds in a different fashion. "While he is gone the other players decide to alter the rules. They will select no word at all; instead each of them will answer 'yes' or 'no' as he pleases--provided he has a word in mind that fits both his own reply and all the previous replies. The outsider returns and, unsuspecting, begins asking questions. At last he makes a guess: "Is the word 'clouds'?" Yes, comes the answer, and the players explain the game" (Newsweek,

1979: 62). When the questioner began, he assumed the answer already existed. Yet the answer was created through the questions raised. If the player asked different questions, a different answer would emerge.

If some organizations play twenty questions in the traditional way, seeking the correct answer already in the environment, and if others play twenty questions John Wheeler's way, constructing an answer, then we have an interesting difference in interpretation behavior. This difference reflects the organization's assumption about the objectivity of its environment.

If an organization assumes that the external environment is concrete, that events and processes are hard, measureable and determinant, then it will play the traditional game to discover the "correct" interpretation. The key for this organization is discovery through intelligence gathering, rational analysis, vigilance, and accurate measurement. This organization will utilize linear thinking and logic, and will seek clear data and solutions.

When an organization assumes that the external environment is subjective, an entirely different strategy will apply. The organization may to some extent create the external environment. The key is to construct, coerce, or enact a reasonable interpretation that makes previous action sensible and suggests some next steps. The interpretation may shape the environment more than the environment shapes the interpretation. The interpretation process is more personal, less linear, more ad hoc and improvisational than for other organizations. The outcome of this process may include the

ability to deal with equivocality, to coerce an answer useful to the organization, to invent an environment and be part of the invention.

What factors explain differences in organizational beliefs about the environment? We would hypothesize characteristics of the environment combined with management's previous interpretation experience. When the environment is unanalyzable (Tung, 1979; Perrow, 1967), difficult to penetrate, or changing (Duncan, 1972), managers will see it as more subjective. Wilensky's (1967) work on intelligence gathering in government organizations detected major differences in the extent to which environments were seen as rationalized, that is, subject to discernible, predictable uniformities in relationships among significant objects. In one organization studied by Aguilar (1967), managers assumed an objective environment because of previous experience. Accurate forecasts were possible because product demand was directly correlated to petroleum demand, which in turn was correlated to well defined trends such as population growth, auto sales, and gasoline consumption. However, for a similar organization in another industry, systematic data collection and analysis were not used. Statistical trends had no correlation with product demand or capital spending. Facts and figures were not consistent with the subjective assumptions about the environment. Soft, qualitative data along with judgment and intuition had a larger role in the interpretation process.

Organizational Intrusiveness

The second major difference we propose among interpretation systems is the extent to which organizations actively intrude into the environment. Some organizations actively search the environment for an answer. They allocate resources to search activities. They hire technically oriented MBAs, build planning, forecasting, or special research departments,

or even subscribe to monitoring services (Thomas, 1980). In extreme cases, organizations may send agents into the field (Wilensky, 1967). Organizational search may also include testing or manipulating the environment. These organizations may leap before they look, perform trials in order to learn what an error is, and discover what is feasible by testing presumed constraints. Forceful organizations may break presumed rules, try to change the rules, or try to manipulate critical factors in the environment (Pfeffer, 1976; Kotter, 1979). A survey of major corporations found that many of them established departments and mechanisms for searching and/or creating environments (Thomas, 1980). These organizations might be called test-makers (Weick and Daft, 1982), and they will develop interpretations quite different from organizations that behave in a passive way.

Passive organizations accept whatever information the environment gives them. These organizations do not engage in trial and error. They do not actively search for the answer in the environment. They do not have departments assigned to discover or manipulate the environment. They may set up receptors to sense whatever data happen to flow by the organization. By accepting the environment as given, these organizations become test-avoiders (Weick, 1979). They interpret the environment within accepted limits.

Research evidence suggests that many organizations are informal and unsystematic in their interpretation of the environment (Fahey and King, 1977). These organizations tend to accept the environment as given, and only respond actively when a crisis occurs. For a crisis, the organization might search out new information or consciously try to influence external events. Other organizations actively search the en-

vironment on a continuous basis (Wilensky, 1967; Aguilar, 1967). Organizations thus differ widely in the active versus passive approach toward interpretation.

One hypothesis to explain differential intrusion into the environment is conflict between organization and environment. Wilensky (1967) argued that when the environment was perceived as hostile or threatening, or when the organization depended heavily on the environment, more resources were allocated to the intelligence gathering function. Organizations attempted to develop multiple lines of inquiry into the environment. In the corporate world, intense competition or resource scarcity will lead to allocation of more resources into interpretation-related functions. Organizations in benevolent environments have weaker incentives to be intrusive (Child, 1974; Hedberg, 1981). Only rarely do organizations in benevolent environments use their slack resources for trial and error experimentation or formal search. A hostile environment generates increased search because of new problems and a perceived need to develop new opportunities and niches. More exhaustive information is needed.

Another hypothesis for different levels of intrusion is organizational age and size (Kimberly and Miles, 1980). New, young organizations typically begin their existence as test-makers. They try new things and actively seek information about their limited environment. Gradually, over time, the organization interpretation system begins to accept the environment rather than searching or testing its boundaries. New organizations are disbelievers, are unindoctrinated, and have less history to rely on. They are more likely to dive in and develop a niche that established organizations failed to see. But as the organization grows and as time passes, the environment may be perceived as less threatening, so search will decrease.

The Model

Based upon the idea that organizations may vary in their beliefs about the environment and in their intrusiveness into the environment, organizations can be categorized according to interpretation modes. The two underlying dimensions are used as the basis for an interpretation system model, presented in figure 2, which describes four categories of interpretation behavior.

The *enacting* mode reflects both an active, intrusive strategy and the assumption that the environment is subjective. These organizations construct their own environments. They gather information by trying new behaviors and seeing what happens. They experiment, test, and stimulate, and they ignore precedent, rules and traditional expectations. This organization is highly activated, perhaps under the belief that it must do so in order to succeed. This type of organization tends to develop and market a product, such as polaroid cameras, based upon what it thinks it can sell. An organization in this mode trends to construct markets rather than waiting for an assessment of demand to tell it what to produce. These organizations, more than others, tend to display the enactment behavior described by Weick (1979).

(Figure 2 about here)

The *discovering* mode also represents an intrusive organization, but the emphasis is on detecting the correct answer already in an objective environment rather than on shaping the answer. Carefully devised measurement probes are sent into the environment to relay information back to the organization. This organization uses market research, trend analysis, and forecasting to predict problems and opportunities. Formal data determine organizational interpretations about environmental characteristics and expectations. Discovering organiza-

tions are similar to organizations observed to rely on formal search procedures for information (Aguilar, 1967), and in which staff analysts are used extensively to gather and analyze data (Wilensky, 1967).

Organizations characterized as *conditioned viewing* (Aguilar, 1967) assume an objective environment and are not intrusive. They tend to rely on established data collection procedures, and the interpretations are developed within traditional boundaries. The environment is perceived as objective and benevolent, so the organization does not take unusual steps to learn about the environment. The viewing is conditioned in the sense that it is limited to the routine documents, reports, publications, and information systems that have grown up through the years. The view of the environment is limited to these traditional sources. At sometime historically, these data were perceived as important, and the organization is now conditioned to them. Organizations in this category use procedures similar to the regular scanning of limited sectors described by Fahey and King (1977).

Undirected viewing (Aguilar, 1967) reflects a similar passive approach, but organizations do not rely on hard, objective data because the environment is assumed to be subjective. Managers act on limited, soft information to create their perceived environment. These organizations are not conditioned by formal management systems within the organization, and are open to a variety of cues about the environment from many sources. Managers in these organizations are like the ones Aguilar (1967) found that relied on information obtained through personal contacts and causal information encounters. Fahey and King (1977) also found some organizational information gathering to be irregular and based upon chance opportunities.

Examples of conditioned and undirected viewing modes were illustrated

by clothing companies in England (Daft and Macintosh, 1978). These companies developed different interpretation systems over time, although they were in a similar industry. Top management in the conditioned viewing organization used a data collection system to routinely record such things as economic conditions, past sales, and weather forecasts. These data were used to predict sales and to schedule production. These systems had grown up over the years and were routinely used to interpret problems that occurred. The other company gathered information from personal contacts with a few store buyers, salesmen, and informants in other companies. Managers also visited a few stores to casually discuss and observe what seemed to be selling. This company used undirected viewing. Interpretation was based on a variety of subjective cues that happened to be available.

Another example of interpretation styles is illustrated by the relationship between corporations and their shareholders (Keim, 1981). A few corporations actively influence and shape shareholder attitudes. The enacting organization may try to manipulate shareholder perceptions toward itself, environmental issues, or political candidates by sending information to shareholders through various media. Discovery oriented corporations actively stay in touch with shareholders to learn what they are thinking, and conduct surveys or use other devices to discover attitudes. A few corporations handle the shareholder relationships through routine data transactions (stockholder voting, mailing out dividend checks), which is typical of conditioned viewing. Finally, some corporations rely on informal, personal contact with shareholders (undirected viewing). Managers use whatever opportunities arise (annual meetings, telephone contact about complaints and questions) to learn shareholder's opinions

and to adapt to those opinions.

Other Organizational Characteristics

The previous section proposed four modes of interpretation that may characterize organizations, and provided the rationale for these modes based upon organizational beliefs about the external environment and organizational intrusiveness. In this section we complete the model by making predictions about other organizational characteristics associated with interpretation modes. This section will bring together material that pertains to (1) scanning and data characteristics, (2) the interpretation process within the organization, and (3) the strategy and decision processes that characterize each mode. The predicted relationships with interpretation modes are in figure 3.

Scanning Characteristics

Scanning characteristics pertain to the nature and acquisition of data for top management about the environment. The data may vary by source and acquisition, depending upon the interpretation mode of the organization.

1. Data Sources. Data about the environment can come to managers from external or internal sources, and from personal or impersonal sources (Aguilar, 1967; Keegan, 1974). External sources occur when managers have direct contact with external information sources. Internal sources pertain to data collected about the environment by other people in the organization and then provided to managers through internal channels. Personal sources involve direct contact with other individuals. Impersonal sources pertain to written documentation such as newspapers and magazines, or reports from the organization's information system.

Generally, the more subjective the perceived external environment the greater the tendency for managers to use external information gained from personal contact with other managers. Organizations characterized as undirected viewing will obtain most of their information from the relationship of senior managers with colleagues in the environment (Keegan, 1974). Managers in enacting organizations will also use personal observations to a large extent, although this information will often be obtained through experimentation and from trying to impose ideas on the environment. When the environment is objective, a larger percentage of the data will be conveyed through the management information system. The discovering organization will also use internal, formal reports, although these reports are the outcome of specialized inquiries rather than from a routine, periodic reporting system.

(Figure 3 about here)

2. Data Acquisition. Organizational mechanisms for acquiring information and the regularity of acquisition are other distinguishing characteristics of organizational scanning (Fahey and King, 1977). Discovering organizations will allocate many resources to data acquisition. Special departments will typically be used to survey and study the environment. Regular reports and special studies will go to top managers. Conditioned viewing organizations will have regular reports available through the formal information system of the organization. These organizations will devote few resources to external scanning.

Undirected viewing organizations will make little use of formal management information. Data will tend to be irregular and casual. Scanning departments are not needed; formal reports will be ad hoc and irregular. The enacting organization will also use data that are somewhat irregular, and will reflect feedback about selected environ-

mental initiatives. The general pattern across organizations is that environmental information is more regular when the environment is objective, and more studies and information are available when the organization is active in information acquisition.

Interpretation Process

Interpretation pertains to the process by which managers translate data into knowledge and understanding about the environment. This process will vary according to the means for equivocality reduction and the assembly rules that govern information processing behavior among managers.

1. Equivocality reduction. Equivocality is the extent to which data are unclear and suggest multiple interpretations about the environment (Weick, 1979; Daft and Macintosh, 1981). Managers in all organizations will experience some equivocality in their data. Equivocality reduction will be greatest in organizations characterized as undirected viewing. External cues of a personal nature are subject to multiple interpretations. Managers will discuss these cues extensively to arrive at a common interpretation. Equivocality is reduced through shared observations and discussion until a common grammar and course of action can be agreed upon (Weick, 1979). The enacting organization will also experience high equivocality, which will be reduced more on the basis of taking action to see what works rather than by interpreting events in the environment. Information equivocality is generally lower in the conditioned viewing and discovering organizations. Some equivocality reduction takes place before the data reaches managers. Specialists will routinize the data for periodic reports and perform systematic analyses and special studies. The data thus provide a more uniform stimulus to managers, and less discussion is needed to reach a common interpretation.

2. Assembly rules. Assembly rules are the procedures or guides that organizations use to process data into a collective interpretation. The content of these rules and the extent to which they are enforced depend upon the organization. Generally, the greater the equivocality in the data, the fewer the number of rules used to arrive at an interpretation. Conversely, the smaller the perceived equivocality of data entering the organization, the greater the number of rules used to assemble the interpretation (Weick, 1979).

Fewer rules are used for equivocal information inputs because there is uncertainty as to exactly what the information means. Only a small number of rather general rules can be used to assemble the process. If the input is less equivocal, there is more certainty as to what the item is and how it should be handled. Hence a greater number of rules can be assigned to handle the data and assemble an interpretation (Putnam and Sorenson, 1982).

The number of information cycles among top management follows a similar logic. The greater the equivocality, the more times the data may be cycled among members before a common interpretation is reached. The lower the equivocality, the fewer cycles needed. The number of assembly rules and cycles tend to be inversely related.

Undirected viewing organizations, which receive equivocal information, will have few rules, but will use many internal cycles during the course of assembling an interpretation. By contrast, managers within a directed viewing organization receive unequivocal information that will be handled according to numerous rules, but few cycles are needed to reach a common understanding. The discovering organization also will use many rules, although a moderate number of cycles may be needed because of some equivocality in the reports and data presented to managers. The equivocality in

interpreting the success of initiatives in the enacting organization will be associated with the moderate number of assembly rules and information cycles.

Strategy Formulation and Decision Making

The variables described above are directly related to the scanning and interpretation behaviors through which organizations learn about and make sense of the external environment. We also propose that two additional variables--strategy formulation and decision making--may be associated with interpretation modes. The hypothesized relationships with interpretation modes are also shown in figure 3.

1. Strategy formulation. Miles and Snow (1978) proposed that corporations can be organized according to four types of strategies: prospector, analyzer, defender, and reactor. Strategy formulation is the responsibility of top management, and thus may be related to environmental conditions that are similar to interpretation modes. The prospector strategy reflects a high level of initiative with regard to the environment. The environment is seen as changing and as containing opportunities. The organization develops new products and undertakes new initiatives. This is consistent with the enacting mode of interpretation. The analyzer organization is more careful. It is concerned with maintaining a stable core of activities but with occasional innovations on the periphery if the environment permits. This strategy is consistent with the discovering orientation, where the organization studies the environment and moves ahead only in a careful, constrained way.

The defender strategy is one in which top management perceives the environment as objective and stable, and the management is determined to protect what it has. This organization is concerned with maintaining traditional markets and is focused on internal ef-

ficiency rather than on external relationships. The defender strategy will tend to be related to the conditioned viewing mode of interpretation. Finally, the reactor strategy is not really a strategy at all. The organization moves along, more or less accepting what comes. This organization will react to seemingly random changes in the environment. Scanning behavior in this organization is based on casual data from personal contacts rather than from specialized information systems. The reactor strategy will be associated with the interpretation mode classified as undirected viewing.

2. Decision making. The organizational literature suggest that organizations make decisions in various ways. Organizational decisions may be influenced by coalition building and political processes (Cyert and March, 1965), by incremental decision steps (Mintzberg, et al, 1976; Lindblom, 1954), by systems analysis and rational procedures (Leavitt, 1975), and by programmed responses to routine problems (March and Simon, 1958; Simon, 1960). Decision making is generally part of the information and interpretation processes in organizations, so we propose that decision processes may be associated with interpretation modes.

In undirected viewing organizations, the environment is subjective. Factors cannot be rationalized to the point of using rational decision models. Managers respond to divergent, personal cues, so extensive discussion and coalition building is required to agree upon a single interpretation and course of action. Managers will spend time making sense of what happened and reaching agreement about problems before proceeding to a solution.

In enacting organizations, by contrast, a more assertive decision style will appear. The enacting organization does not have precedent to follow. A good idea, arrived at subjectively, may be implemented to see if it works. Enacting organizations utilize the trial and error in-

cremental process described by Mintzberg, et al (1976). When organizations decide on a course of action, they design a custom solution and try it. If the solution does not work, they have to recycle and try again. Enacting organizations move ahead incrementally and gain information about the environment by trying behaviors and seeing what works.

Discovering organizations also take an active approach, but assume that the environment is objective. Here the emphasis is on rational understanding. Systems analysis will be an important decision tool. Operational researchers and other staff personal will perform computations on environmental data and weigh alternatives before proceeding. This organization's decision process will be characterized by logic and analysis. Solutions will not be tried until alternatives have been carefully weighed.

Finally, directed viewing organizations may be considered the easiest situation for decision makers. The organization is passive and operates in an objective environment. Decision making by managers is programmed. Programs are built into the organization to describe reactions to external events based on previous experience. Rules and regulations cover most activities, and are applied unless a genuine crisis erupts. Crises will be rare, but if one occurs, managers will respond with problemistic search (March and Simon, 1957). Problemistic search means that the organization performs a local search through its immediate memory bank for a solution. Only after exhausting traditional responses will the organization move toward a new response of some sort.

Implications

The purpose of this paper has been to present a model of organizations as interpretation systems, and to bring together a number of ideas that are related to interpretation behavior. The two variables underlying the model are (1) management's beliefs about the objectivity of the external environment and (2) organizational intrusiveness. These variables are consistent with empirical investigations of interpretation behavior (Aguilar, 1967; Wilensky, 1967), and are the basis for four modes of interpretation--enacting, discovering, undirected viewing, and conditioned viewing. The model explains interpretation behaviors ranging from environmental enactment to passive observation. The model also makes predictions about scanning characteristics, interpretation processes, and top management strategy and decision behavior.

The model is proposed as a set of tentative hypotheses for future test. Evidence in the literature does support the general framework, but the specific predictions remain to be tested. The model might best be characterized as an initial organization of ideas about scanning and interpretation behavior. The model has implications for research and the practice of management.

Organizational Research. The implications of the interpretation system model for organizational research are two fold. First, the interpretation system perspective is concerned with high level processes on Boulding's system hierarchy (Pondy and Mitroff, 1978; Daft, 1980). An organization might be viewed as a framework, control system, or open system by organization scholars. The interpretation system view is concerned with specialized information reception, equivocality reduction, and sensemaking. This perspective represents a move away from mechanical

and biological metaphors of organizations. Organizations are more than transformation processes or control systems. To survive, organizations must have mechanisms to interpret ambiguous events and to provide meaning and direction for participants. Organizations are meaning systems, and this distinguishes them from lower level systems.

Perhaps the process of interpretation is so familiar that we take it for granted, which may be why little research on this topic has been reported. But interpretation may be one of the most important functions organizations perform. Indeed, the second research implication of the interpretation system perspective is that scanning and sensemaking activities are at the center of things. Almost every other organizational activity or outcome is in some way contingent upon interpretation. For example, one of the widely held tenets in organization theory is that the external environment will influence organization structure and design (Duncan, 1972; Pfeffer and Salancik, 1978; Tung, 1979). But that relationship can only be manifested if participants within the organization sense and interpretate the environment and respond to it. Almost all outcomes in terms of organization structure and design, whether caused by the environment, technology, or size, depend upon the interpretation of problems or opportunities by key decision makers. Once interpretation occurs, the organization can formulate a response. Many activities in organizations, whether under the heading of structure, decision making, strategy formulation, organizational learning, goal setting, or innovation and change, may be connected to the mode of interpreting the external environment.

The paradox is that research into environment-structure relationships gives scant attention to interpretation. An issue that seems crucial for

explaining the why of organizational form has produced little systematic research. One value of the model proposed here, then, is to introduce an interpretation model and set of relationships as candidates for empirical research in the future.

Management. The interpretation system model has two implications for managers. First, it says that the job of management is to interpret, not to do the operational work of the organization. The model calls attention to the need in organizations to make sense of things, to be aware of external events, and to translate cues into meaning for organizational participants. Managers, especially top managers, are responsible for this process and are actively involved in it. Managers may do interpretations spontaneously and intuitively, without realizing their role in defining the environment for other participants. One implication is for managers to think of organizations as interpretation systems and to take seriously their roles as interpreters.

The other implication of the model is that it provides a comparative perspective for managers. The model calls attention to interpretation modes managers may not have thought of before. If managers have spent their organizational lives in a discovery-oriented interpretation system, using relatively sophisticated monitoring systems, they might want to consider modifying these activities toward a more subjective approach. The external environment may not be as objective as they assume. Discovery-oriented managers could consider intuition and hunch in some situations, and decide to launch test markets instead of market surveys. On the other hand, passive, conditioned viewers might be encouraged to try breaking established rules and patterns to see what happens. The value of any comparative model is that it provides new alternatives. Managers can understand where they are as opposed to where they would like to be. Managers may find they can create a new and valuable display of the en-

vironment by adopting new interpretation assumptions and modes.

Conclusion

Any model is itself a somewhat arbitrary interpretation imposed upon organized activity. Any model involves tradeoffs and unavoidable weaknesses. The greatest weakness in the model presented in this paper is reflected in Thorngate's (1976) postulate of commensurate complexity. His postulate states that a theory of social behavior cannot be simultaneously general, accurate, and simple. Two of the three characteristics are possible, but only at a loss to the third. The model in this paper has attempted to be general and simple, and the tradeoff is a model that is not very accurate at specifying details. The loss in precision may not be all bad, however. An interpretation system is an awesomely complex human social activity that may not be amenable to precise measurement at this point in our understanding (Daft and Wiginton, 1979). To design a model that is precise and accurate may be to lose the phenomenon of interest.

Interpretation is the process through which information is given meaning and actions are chosen. Even in the most objective environments, the interpretation process may not be easy. People in organizations are talented at normalizing deviant events, at reconciling outliers to a central tendency, at producing plausible displays, at making due with scraps of information, at translating equivocality into feasible alternatives, and at treating as sufficient whatever information is at hand (Weick and Daft, 1983). The result of these human tendencies is that the organization can build up workable interpretations from scraps that consolidate and inform other bits and pieces of data. The process and the outcomes are a good deal less tidy than many of us have come to appreciate with current models and assumptions about organizations. The ideas proposed in this paper suggest a new viewpoint--perhaps a starting

point of sorts--from which to interpret the richness and complexity of organizational activity.

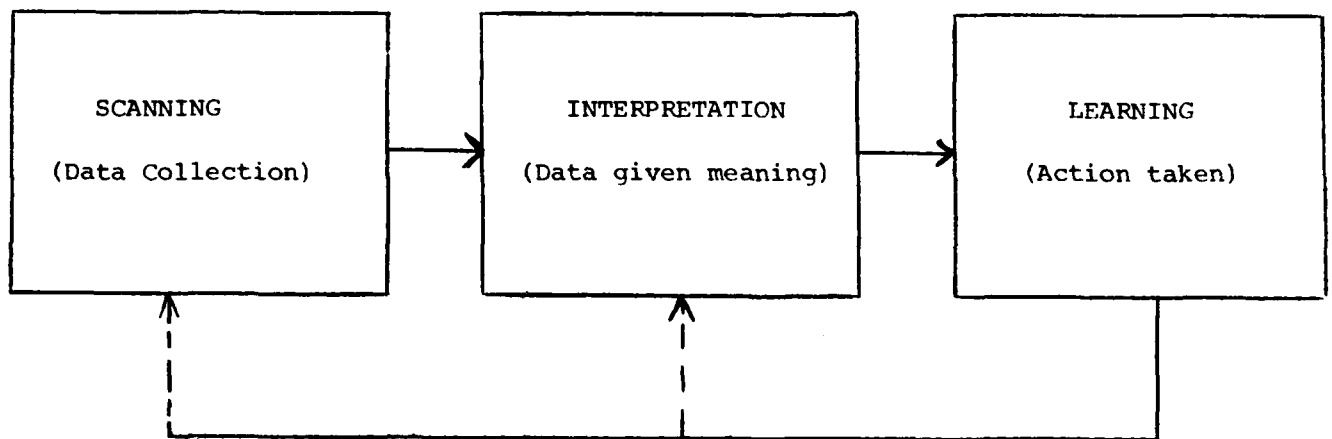


Figure 1. Relationship among organizational scanning, interpretation and learning.

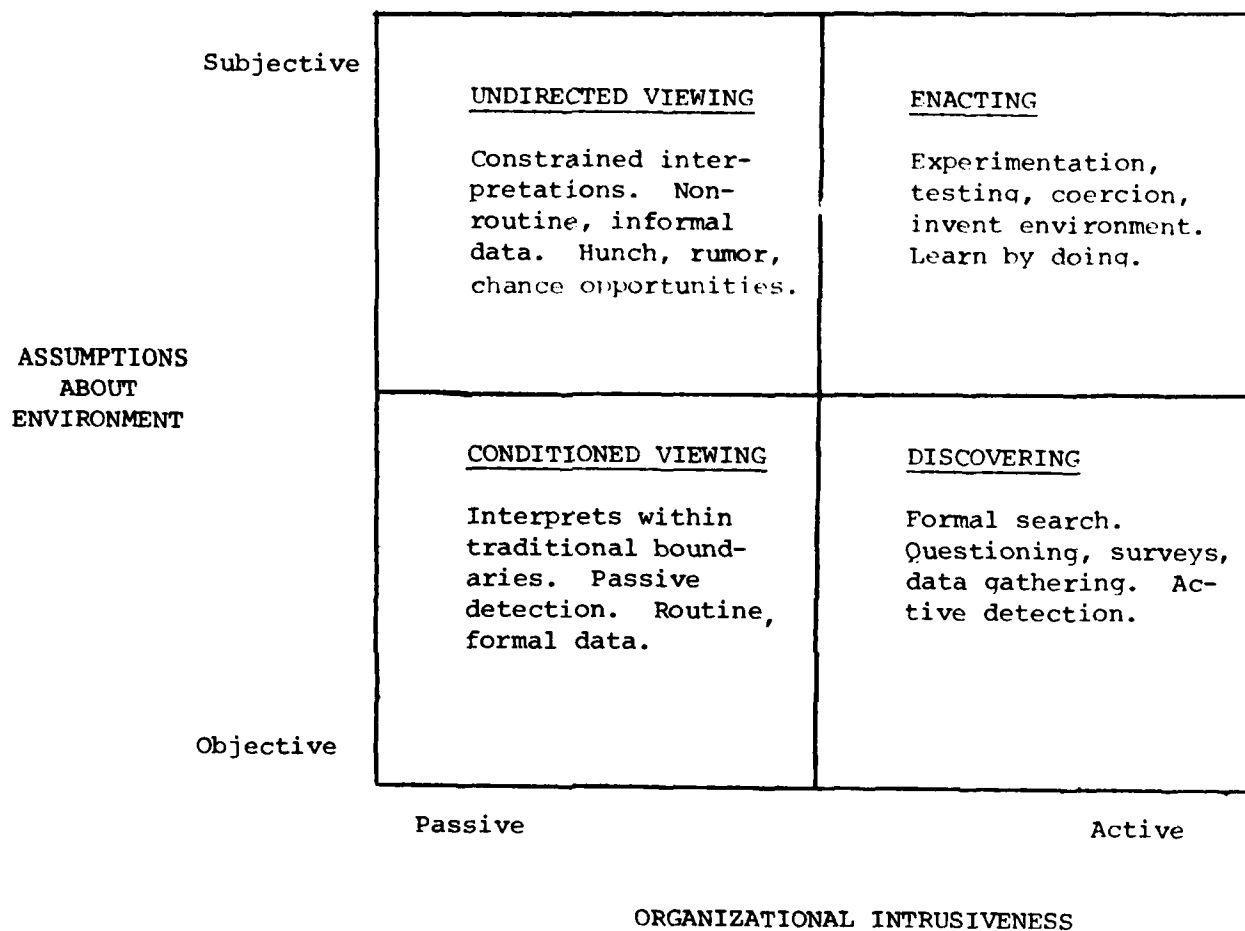


Figure 2. Model of organizational interpretation modes.

<p>Subjective</p> <p>ASSUMPTIONS ABOUT ENVIRONMENT</p>	<p><u>UNDIRECTED VIEWING</u></p> <p>Scanning Characteristics:</p> <ol style="list-style-type: none"> 1. Data Sources: External, personal. 2. Acquisition: No scanning department irregular contacts and reports, casual information. <p>Interpretation Process:</p> <ol style="list-style-type: none"> 1. Much equivocality reduction 2. Few rules, many cycles <p>Strategy and Decision Making:</p> <ol style="list-style-type: none"> 1. Strategy: Reactor. 2. Decision Process: Coalition building. 	<p><u>ENACTING</u></p> <p>Scanning Characteristics:</p> <ol style="list-style-type: none"> 1. Data Sources: External, personal. 2. Acquisition: No department, irregular reports and feedback from environment, selective information. <p>Interpretation Process:</p> <ol style="list-style-type: none"> 1. Some equivocality reduction 2. Moderate rules and cycles <p>Strategy and Decision Making:</p> <ol style="list-style-type: none"> 1. Strategy: Prospector. 2. Decision Process: Incremental trial and error.
	<p><u>CONDITIONED VIEWING</u></p> <p>Scanning Characteristics:</p> <ol style="list-style-type: none"> 1. Data Sources: Internal, impersonal. 2. Acquisition: No department, although regular record keeping and information systems, routine information. <p>Interpretation Process:</p> <ol style="list-style-type: none"> 1. Little equivocality reduction 2. Many rules, few cycles <p>Strategy and Decision Making:</p> <ol style="list-style-type: none"> 1. Strategy: Defender. 2. Decision Process: Programmed, problemistic search. 	<p><u>DISCOVERING</u></p> <p>Scanning Characteristics:</p> <ol style="list-style-type: none"> 1. Data Sources: Internal, impersonal. 2. Separate departments, special studies and reports, extensive information. <p>Interpretation Process:</p> <ol style="list-style-type: none"> 1. Little equivocality reduction 2. Many rules, moderate cycles <p>Strategy and Decision Making:</p> <ol style="list-style-type: none"> 1. Strategy: Analyzer. 2. Decision Process: Systems analysis, computation.
<p>Objective</p>	<p>Passive</p>	<p>Active</p>

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Figure 3. Relationship between interpretation modes and organizational processes.

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